

WHAT IS CLAIMED IS:

1. A control method of channel assign to a modem processing means of an RF base station so as to demodulate a base band received signal and modulate a transmit data signal, said modem processing means operating in a time-sharing manner;

wherein said channel assign for demodulating said base band received signal is done in the following steps of;

converting a plurality of carrier frequency band signals received by a plurality of antennas provided in said RF base station to a plurality of base band received signals in an RF unit;

storing a plurality of said base band received signals in a buffer memory; and

assigning a channel to said modem processing means, said channel being used for demodulating a plurality of said base band received signals received from said buffer memory; and

channel assign for demodulating said base band received signals and channel assign for modulating said transmit data signals are done in the following steps of;

enabling a controller to check a time slot;

assigning a channel in a idle time slot if said idle time slot is found; and

avoiding assignment of said channel if no idle time slot is found.

2. A control method of channel assign to a modem processing unit of an RF base station so as to demodulate a base band received signal and modulate a transmit data signal, said modem processing unit operating in a time-multiplexing manner;

wherein said channel assign for demodulating said base band received signal is done in the following steps of;

converting a plurality of carrier frequency band signals received by a plurality of antennas provided in said RF base station to a plurality of base band received signals in an RF unit;

storing a plurality of said base band received signals in a buffer memory;

assigning a channel to said modem processing unit, said channel being used for demodulating a plurality of said base band signals received from said buffer memory; and

channel assign for demodulating said base band received signals and channel assign for modulating said transmit data signals are done in the following steps of;

enabling a controller to check the load of said modem processing unit; and

enabling said modem processing unit to assign a channel to said modem processing unit if said modem processing unit still has a load margin.

3. A control method of channel assign to a plurality of modem processing means of an RF base station so as to demodulate a base band received signal and modulate a transmit data signal, said modem processing means operating in a time-multiplexing manner respectively;

wherein said channel assign for demodulating said base band received signal is done in the following steps of;

converting a plurality of carrier frequency band signals received by a plurality of antennas provided in an RF base station to a plurality of base band received signals in an RF unit;

storing a plurality of said base band received signals in a buffer memory; and

assigning a channel to said modem processing means respectively, said channel being used for demodulating a plurality of said base band signals received from said buffer memory; then

channel assign for demodulating said base band received signals and channel assign for modulating said transmit data signals are done in the following steps of;

enabling a controller to check the loads of a plurality of said modem processing units so that a channel is assigned

to a modem processing means still having a load margin if there are a plurality of said modem processing means still having a load margin respectively.

4. A control method of channel assign to a modem processing unit of an RF base station so as to demodulate a base band received signal and modulate a transmit data signal, said modem processing unit operating in a time-multiplexing manner and being provided with a plurality of calculation means blocks, each provided for a plurality of calculation means having the same calculation interval;

wherein said channel assign for demodulating said base band received signal is done in the following steps of;

converting a plurality of carrier frequency band signals received by a plurality of antennas provided in said RF base station to a plurality of base band received signals in an RF unit;

storing a plurality of said base band received signals in a buffer memory; and

assigning a channel to said modem processing unit, said channel being used for demodulating a plurality of said base band signals received from said buffer memory; and

said channel assign for demodulating said base band received signal and modulating said transmit data signal is done in a step of;

enabling a controller to check loads of a plurality of said calculation means so that a channel is assigned to any calculation means having a load margin if there are a plurality of said calculator means having a load margin respectively.

5. The control method of channel assign according to claim 3;

wherein channel assign to a plurality of said modem processing means is done so that a channel is assigned to a modem processing means having a higher load margin, selected from those having a load margin respectively.

6. The control method of channel assign according to claim 3;

wherein channel assign to a plurality of said modem processing means is done so that a channel is assigned to a modem processing means having a lower load margin, selected from those having a load margin respectively.

7. The control method of channel assign according to claim 3;

wherein channel assign to a plurality of said modem processing means is done in a hand-over processing executed by a mobile station moving from a first sector controlled by said RF base station to a second sector so that a second channel for demodulating a second signal received by a second antenna of said RF base station is assigned to a modem

processing means of said RF base station to which a first channel for demodulating a first signal received by a first antenna is assigned, said first signal being transmitted from said RF mobile station and forming a first sector, said second signal being transmitted from said RF mobile station and forming a second sector.

8. The control method of channel assign according to claim 7;

wherein the load of said modem processing means is checked before said second channel is assigned to said modem processing means so as not to assign said second channel to said modem processing means when said modem processing means is loaded inversely.

9. The control method of channel assign according to claim 3;

wherein channel assign to a plurality of said modem processing means is done in a hand-over processing executed by a mobile station moving from a first sector controlled by said RF base station to a second sector so that a second channel for demodulating a second signal received by a second antenna of said RF base station is assigned to a modem processing means of said RF base station to which a first channel for demodulating a first signal received by a first antenna is assigned, said first signal being transmitted from said RF mobile station and forming a first sector, said

second signal being transmitted from said RF mobile station and forming a second sector; and

    said first channel for demodulating said first signal and said second channel for demodulating said second signal are held in the same modem processing means.

10. A control method of channel assign so as to execute a hand-over processing in an RF mobile station moving between sectors from a first sector controlled by a first antenna of an RF base station to a second sector controlled by a second antenna;

    wherein said first channel for demodulating said first signal received by said first antenna and said second channel for demodulating said second signal received by said second antenna are assigned to the same modem processing means.

11. The control method of channel assign according to claim 10;

    wherein said channel assign is done in said hand-over processing started so that channel assign to a plurality of said modem processing means of an RF base station is changed, thereby said first and second channels are assigned to the same modem processing means when it is impossible to assign a second channel newly to a modem processing means to which said first channel is already assigned.

12. A control method of channel assign;

wherein a first channel for demodulating a first frequency signal of an RF mobile station, received by a first antenna of an RF base station and a second channel for demodulating a second frequency signal of said RF mobile station, received by a second antenna of said RF base station are assigned to the same modem processing means of said RF base station.

13. The control method of channel assign according to claim 12;

wherein said channel assign is done when a second channel cannot be assigned newly to a modem processing means of said RF base station, to which said first channel is assigned so that channel assign to a plurality of said modem processing means of said RF base station is changed, thereby assigning said first and second channels to the same modem processing means.